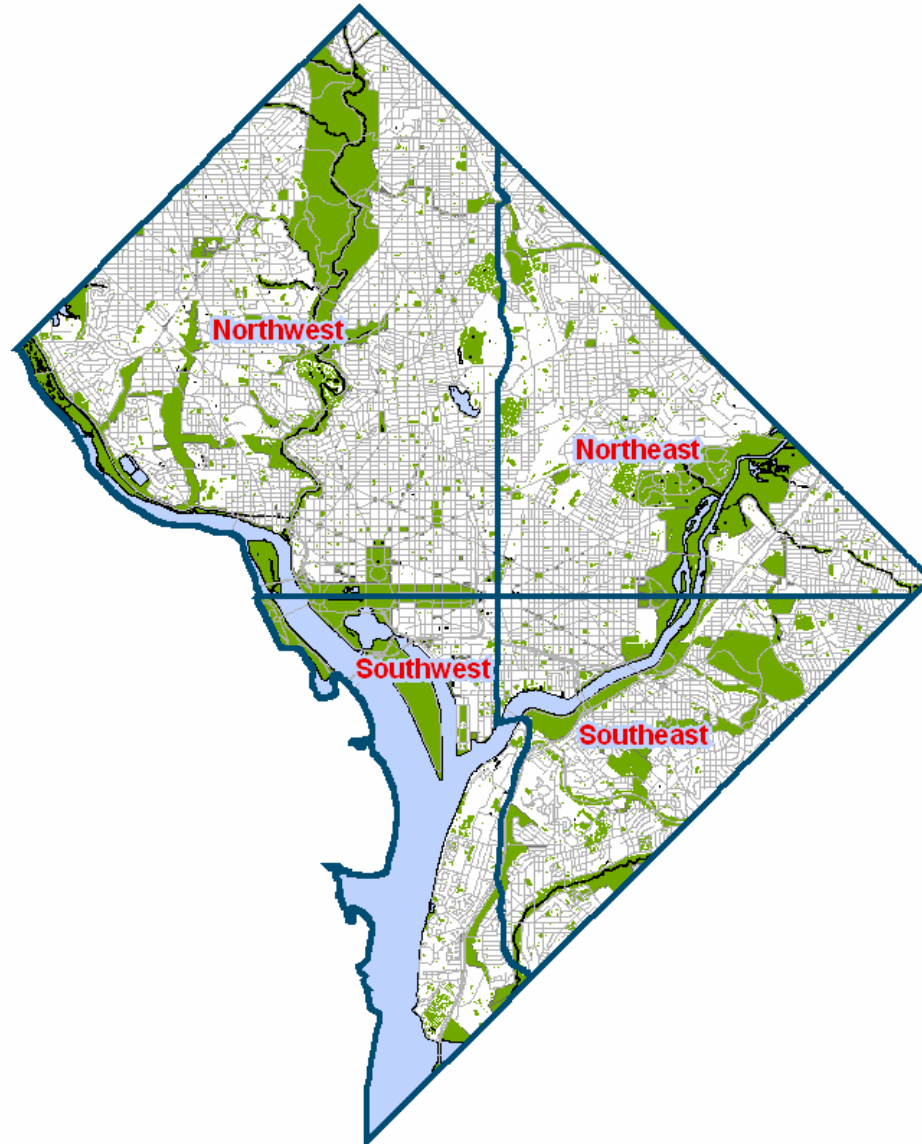




The Development of a Master Address Repository for Washington, DC





What is the Master Address Repository (MAR)?

Comprehensive Gazetteer for the District of Columbia

- ✓ The MAR is Standards
 - ✓ An official syntax for addresses and address components
- ✓ The MAR is Data
 - ✓ A comprehensive point address database for Washington, DC. 135,900, valid addresses assembled and researched from more than 20 Address Databases.
 - ✓ Front elevation photographs of most taxable structures
 - ✓ Locations for each intersections, blocks, property squares.
 - ✓ Alias records that contains relate to government offices, memorials, museums, landmarks, statues, hospitals, schools, police stations, fire stations, and other prominent locations
- ✓ The MAR is Applications
 - ✓ Web services that can be embedded into other applications
 - ✓ A Web site
 - ✓ A stand alone batch geocoder
 - ✓ Tools within ArcGIS – DC GIS Toolbar



Project Objectives

- ✓ Create a repository that is real time and contains 100% of all valid DC addresses, intersections, block information, and significant place names.
- ✓ Create an enterprise system that is capable of allowing ALL DC agencies to verifying addresses for their business purposes.
- ✓ Create an enterprise application tool that is capable of cleaning address data and purging incorrect address data.



Why Is MAR Important?

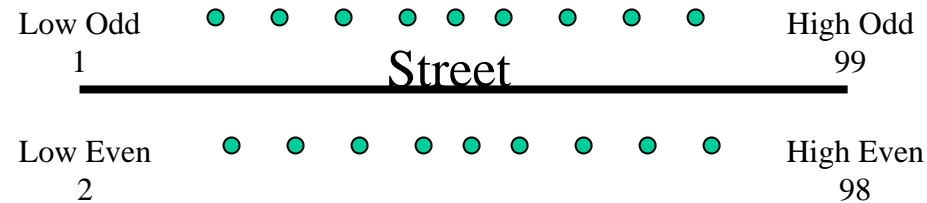
- ✓ The MAR has established a unified addressing standard. It allows the District Government to easily compare information about an address, block or intersection across databases and agencies.
- ✓ Addressing standards are built into the MAR.
- ✓ It has tools that allow for geocoding and information retrieval regarding addresses, intersections and blocks that enforce the standards.
- ✓ Ultimately will greatly simplify crosscutting queries by address within the DC government.



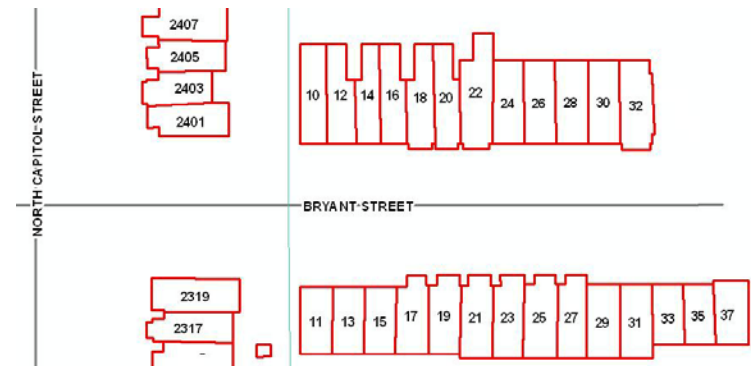
Why MAR is Better than Anything We had Before?

- **Point Geocoding**
 - More flexible
 - More spatially accurate
- **Street Name (Aliases)**
- **Military Areas**
- **University Campuses**
- **Public Housing**
- **Apartment Buildings**
- **Place Names (Aliases)**
- **Scrubbing Addresses**

Street Centerline Geocoding

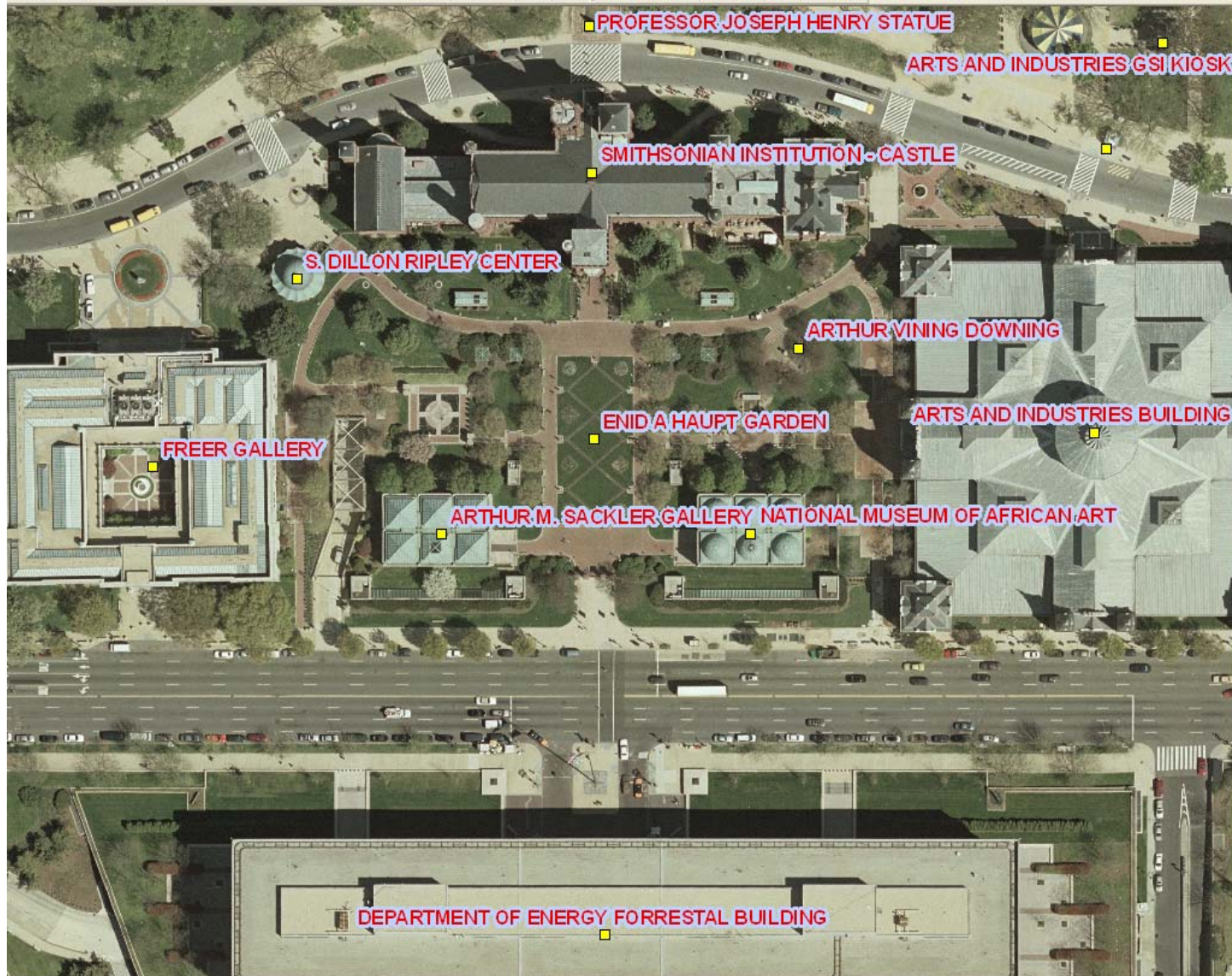


Point Geocoding





Aliases: Museums & Government Buildings





MAR Maintenance

- ☐ **OCTO -Responsible for technical support**
 - **Database**
 - **Web Service**
 - **Batch Processing**
 - **Initial Field Work**
 - **Initial address range push**

- ☐ **DCRA -Responsible for maintaining individual addresses**
 - **Creating New Addresses**
 - **Including Field Work**
 - **Actual Address Ranges (tentative)**

- ☐ **DDOT- Responsible for maintaining Street Centerline File**
 - **Street Name**
 - **Theoretical Address Range**
 - **Roadwayseg ID**



MAR: Database Design

- The MAR is stored in Oracle 9.2.07
- It is a relational database with over 20 tables
- It is linked with DC Department of Transportation's Street Spatial Database (SSD)

Address Attributes

- Unique Address Identification Number (AID)
- Street Number
- Street Name
- Street Type
- Quadrant
- Full Address
- Roawaysegment
- X Coordinates
- Y Coordinates
- Ward
- ANC
- Property square
- Neighborhood Cluster
- Zipcode
- National Grid Coordinates
- Voting Precinct
- Census Tract
- Police District & Police Service Area





Address Verification Process

- ✓ **Sources for New Addresses**
 - **Change Detection**
 - **Individual Requests (submitted by users)**
 - **Database Matching**
- ✓ **Checking Individual Addresses**
- ✓ **Digitizing Addresses**
- ✓ **Address Anomalies**

The database matching technique yields the most missing or faulty addresses. Some of them are as follows:

- **Abbreviations:** 'CT AVENUE' the state postal abbreviation instead of 'CONNECTICUT AVENUE' or 'AVE' instead of 'AVENUE'
- **Incorrect Quadrant:** Quadrants are the unique address scenario for DC. There are four quads in Washington DC..... NE, NW, SE and SW. Even a complete address may be wrong due to Quad.



Database Matching

- ✓ **Acquire Database with Addresses in DC**
 - Voter Rolls
 - Office of Tax & Revenue
 - Death & Birth Certificate
 - E911 Calls
 - Building Permits
 - Driver Licenses
 - Students In Public Schools
 - Basic Business
- ✓ **Cleanup & Format addresses to match MAR**
- ✓ **Addresses that do NOT match are separated**
- ✓ **Research unmatched addresses to determine validity**
- ✓ **Add validated addresses to the MAR**



Individual Requests

MAR Address Submission

*Now fill in the form and click the 'Submit' button. (Fields marked with an asterisk * are required.)*

*Address for Submission: i.e. 440 4th St NW	<input type="text" value="301 DECATUR STREET NW"/>
Contact Agency:	<input type="text"/>
Contact Name:	<input type="text"/>
*Contact Phone: i.e. 202-727-7777	<input type="text"/>
*Contact Email: i.e. john.doe@dc.gov	<input type="text"/>
<input type="button" value="Submit"/>	

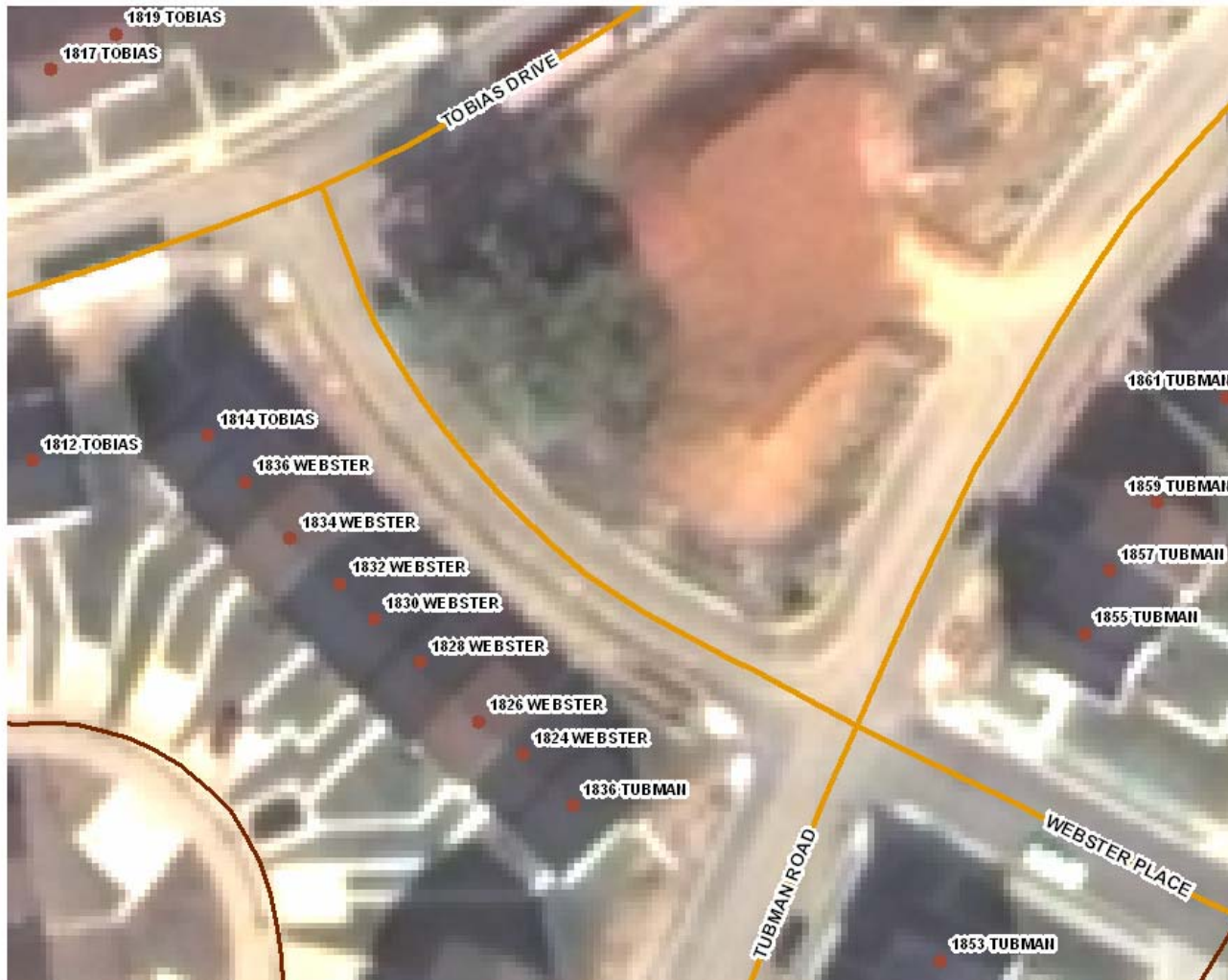
Diagnosis:

Component	Parsed & Normalized	Assessment
Street Type	STREET	Valid
Quad	NW	Valid
Street Name	DECATUR	Valid
Address Number/Street Name	301 DECATUR	Not Valid
Street Name/Street Type	DECATUR STREET	Valid
Street Name/Street Type/Quad	DECATUR STREET NW	Valid
Full Address	301 DECATUR STREET NW	Valid Not Verified



Change Detection

Henson Ridge: New Development in SE: 4Q 2005



Same Site: 2Q 1999



Location in DC





Checking Individual Addresses

Below are some sources that are being used for address verification:

- **United States Postal Service (USPS) Data**
- **Orthophotography Imagery**
- **Pictometry Imagery**
- **Street Centerlines**
- **Existing Addresses**
- **Internet Search**
- **Field Research**



Address Anomalies

Address anomalies are basically unusual addresses. These address anomalies are significant because these cases are reality and had to be accounted for in the repository. The following anomalies were found while working on the MAR:

Examples of Address Anomalies

- **Out of Sequence**
- **Address Far from Its Associated Street Name**
- **No Address Pattern Along The Same Street Segment**
- **1/2 Addresses**
- **REAR Addresses**
- **Addresses on the Wrong Side of the Street**



Out of Sequence



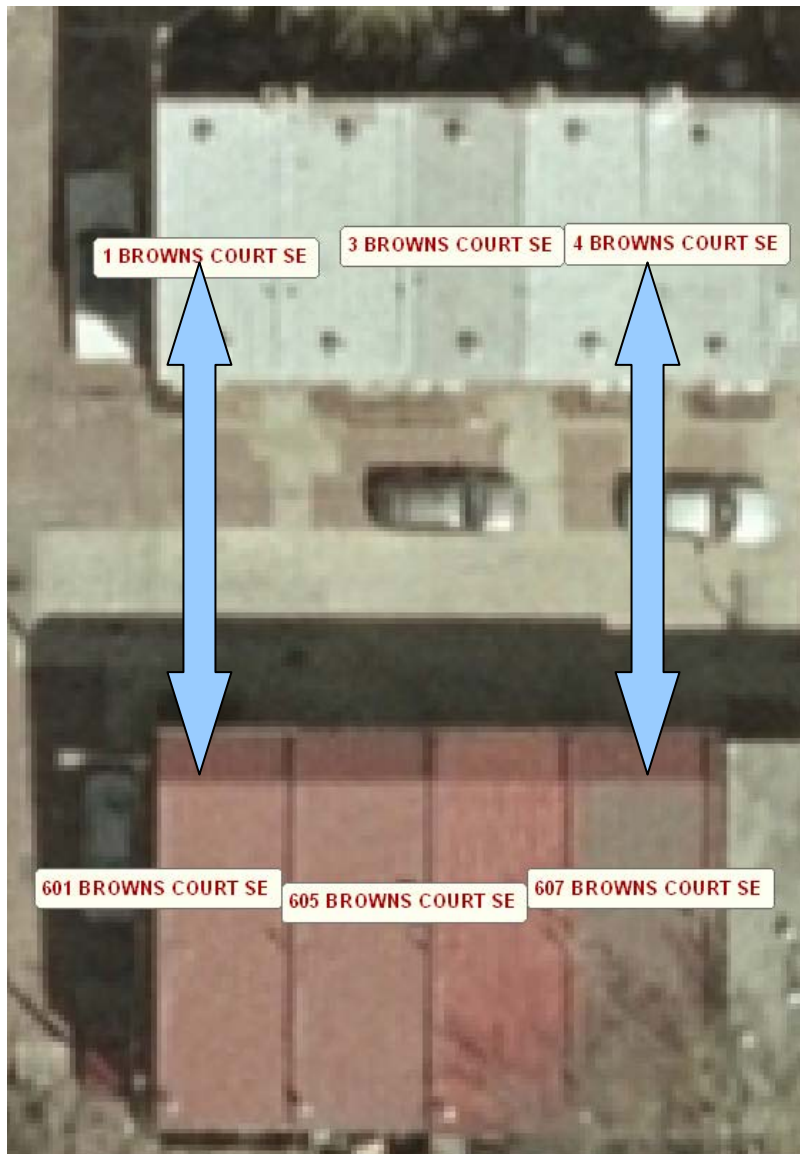


Address Far from Its Associated Street Name



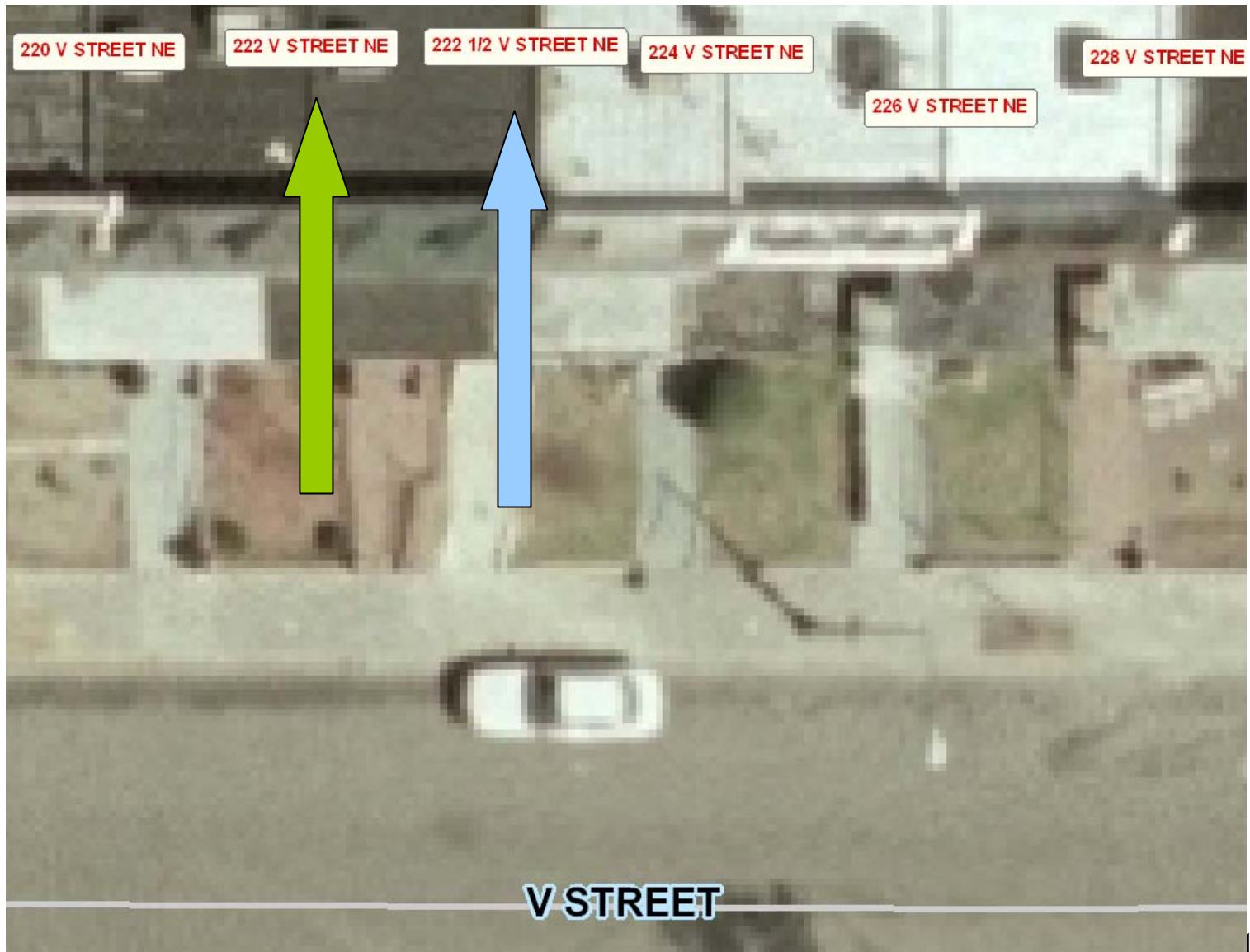


No Address Pattern Along The Same Street Segment





1/2 Address





REAR Address





Address on the Wrong Side of the Street






Ways to Access MAR

- ☐ MAR Web Services
- ☐ Current Applications Supported by the MAR Web Service
 - o MAR Sample Client
 - o Crime Mapper
 - o DC Public School Boundary Information System
 - o District Enterprise Zone Finder
 - o DCStat Neighborhood View
 - o DC GIS Tools, Citrix hosted ArcGIS
- ☐ Feature class in an enterprise wide ArcSDE
- ☐ Downloadable AddressPts as Shapefile




MAR Web Services



August 18, 2006 9:26 AM

Agencies Home

Search: Ask



[+ DCGIS HOME](#)
[+ SERVICES](#)
[+ INFORMATION](#)

Tools for Application Developers

DC GIS Web Services are meant to be used by developers who want to add GIS functionality to web pages. The links below contain code parameters and variables.

- [Basic Map](#): Design your own map.
- [Category Contents](#): View category information based on category ID.
- [Category Features](#): Enter a category ID and point coordinates to see features that contain that point.
- [Feature Details](#): Find out about a feature based on a feature ID.
- [Point Area Report](#): Returns results based on X, Y and Catagory ID.
- [Political Area Report](#): Get political area information.
- [Political Area Summary](#): Get all political area information based on point coordinates.
- [Coordinate Converter](#): Converts State Plane to United States National Grid or Latitude Longitude.
- [MAR Location Verifier](#): Verify DC address, intersection, block, AID, SSL, and place name, or find an address and intersection.

View a sample implementation of the [MAR Location Verifier Web Service](#).


Content Last Modified on 3/30/2006 3:53:54 PM

Login | Contact Webmaster | Site Map | View as Text Only




Current Applications Supported by the MAR Web Service


- MAR Sample Client



August 18, 2006 9:34 AM

Agencies Home

Search: 




[DCGIS HOME](#)
[SERVICES](#)
[INFORMATION](#)

Master Address Repository

[Web services document](#)

Verify DC Address and Location


441 4th Street nw 

-- Address. Address number and street name are required
-- Intersection. "AND" or "&" is required
-- Block. "BETWEEN" and "AND"("&") or "FROM" and "TO" are required
-- AID. Only numeric value is allowed
-- Place Name

Find DC Address by SSL


Square:


Suffix:

Lot: 

To get a new or modify a DC address, please go to [DCRA](#)

Component	Parsed & Normalized	Assessment
Full Address	441 4TH STREET NW	Verified

Map	Photo	AddressID	FullAddress	ConfidenceLevel
Map it		285552	441 4TH STREET NW	100




Login | Contact Webmaster | Site Map | View as Text Only



Current Applications Supported by the MAR Web Service

- Crime Mapper

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 **WELCOME TO WASHINGTON**
District of Columbia

Metropolitan Police Department

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[In the Media](#)
[FOIA Requests](#)
[News Room](#)
[FAQs](#)
[Employment](#)
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[Chiefs Letter](#)
[Three Approaches to Prevention](#)
[Working Together](#)
[Success Stories](#)



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[Specialized Units](#)
[Crime Statistics](#)
[Programs & Resources](#)
[Publications & Reports](#)
[Safety Tips](#)
[Traffic Safety](#)

Search for Crimes

Specify a Location
☒ Address ☐ MPD PSA or District ☐ Other Geographic Area
Enter an address, street block or intersection. For example, **300 Indiana Avenue NW**, **500 Block 5th St NW**, **4th Street NW AND H Street NW**

Enter the Search Distance
This is the distance in feet from your search location. Only valid for addresses and locations that are not areas (i.e. PSA or neighborhood).
☐ 500 ☒ 1000 ☐ 1500 ☐ Other (between 100-1,500 feet)

Select a Date Range
Select a preset range or enter your own dates. The **From** date up to two years ago; and the **To** date can be up to one year after the From date.
☒ Last 30 Days ☐ Last 60 Days ☐ Last 365 Days ☐ Year to Date ☐ Other
From: 
ex. mm/dd/yyyy
To: 
ex. mm/dd/yyyy

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Citywide Call Center : (202) 727-1000
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John A. Wilson Building
1350 Pennsylvania Avenue, NW
Washington, DC 20004



Current Applications Supported by the MAR Web Service

- DC Public School Boundary Information System

**eBIS**
Boundary Information System

District of Columbia Public Schools

Provide an address below to see the school assigned to that address
e.g. 1301 Massachusetts ave

Find the school assigned to your address



Note: District of Columbia Public Schools has announced that there were several elementary and one middle school boundary that changed as of June 28th, 2006. School assignment boundaries have not yet been updated by DC GIS. DC GIS will update all mapping applications including DC Guide, and DC Atlas as more detailed boundary information becomes available from DCPS. Currently, all DC GIS systems reflect the out-of-date boundaries.

For comments, questions or additional information, please contact DCPS at 202-576-7718

District of Columbia Public Schools
Office of Information Technology | Enterprise Information Services

powered by
DC Atlas 



Current Applications Supported by the MAR Web Service

- District Enterprise Zone Finder

[DC HOME](#) | [DC GUIDE](#) | [RESIDENTS](#) | [BUSINESS](#) | [VISITORS](#) | [DC GOVERNMENT](#) | [Kids](#) | [☆](#)

WELCOME TO WASHINGTON
District of Columbia
MAYOR Anthony A. Williams

Small and Local Business Development

DSLBD HOME
SERVICES
LSDBE Business Center
Search the LSDBE
Company Directory
Enterprise Zone Program
Local Business
Advocacy
INFORMATION
ONLINE SERVICE REQUESTS

District Enterprise Zone Finder

A variety of incentive programs are available to help District businesses obtain financing, reduce their costs, and compete for business opportunities with the District.

View Enterprise/Economic Development Zones

Enterprise Zone*

Economic Development Zones*

Enterprise Zones and Economic Development Zones are both areas in the District designated by law to provide special initiatives that stimulate economic growth and job development. Programs include taxable and tax-exempt revenue bonds to finance the acquisition, construction and renovation of a wide array of capital projects owned by private enterprises and nonprofit institutions; wage credits and additional expensing allowance; a zero federal capital-gains tax rate on certain investments; and tax-exempt bond financing. Businesses that are located within either of these zones and have received a "DZE" certification from DSLBD will also be eligible for two preference points and a two-percent price reduction for proposals and bids. Select an icon to the left to see the boundaries of either zone and print the maps to help you choose your business location. For more details, please see the [Deputy Mayor for Planning and Economic Development](#) website.

* This document is presented in Portable Document Format (PDF). A PDF reader is required for viewing. [Download a PDF Reader](#) or [Learn More About PDFs](#).

Enter an address to see if it is located in the District Enterprise Zone (EZ)

Examples: 441 4th Street NW, 421 Alabama Avenue SE

Government of the District of Columbia
Citywide Call Center : (202) 727-1000
[TTY/TDD Directory](#)

[Telephone Directory by Topic](#) | [Agencies](#) | [DC Council](#) | [Search](#) | [Elected Officials](#)
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Washington, DC 20004



Current Applications Supported by the MAR Web Service

- DCStat Neighborhood View

The screenshot displays the DCStat Neighborhood View web application. The interface includes a top navigation bar with the DCStat logo, a title bar, and user login fields. Below the navigation bar, there are tabs for 'My Dashboard' and 'Service Requests'. The main content area features a map of Washington, D.C., with various neighborhood boundaries and labels. A legend on the right side of the map lists features such as '2005 Warm Spots', '2005 Hot Spots', 'Wards', 'Primary Streets', 'Water Bodies', 'Mask', 'DC Boundary', and 'Park'. The bottom of the interface contains a 'Welcome' section with links to 'User Guide' and 'Online Help', and a 'What's New' section with a link to 'DCStat Announces New Data Available via Neighborhood View 1.0'.

DCStat Neighborhood View

Username: Password: [Log In](#)

Print: Help: Telephone: Friday, August 18 9:49:24 AM

My Dashboard **Service Requests**

Map Contents [Reset Map](#)

- DCStat Map Features
 - My Map Display
 - Crime Jan 2004-now
 - Service Requests Jan 2004-now
 - DDOT Permits
 - DOH Code Enforcement
 - Business
 - Human Services
 - Education
 - Property
 - Administrative Areas
 - District/Federal/Intl. Facilities
 - Transportation
 - Recreation
 - Natural Features
 - Aerial Photos

Legend **Watch** **Locate**

- 2005 Warm Spots
- 2005 Hot Spots
- Wards
- Primary Streets
- Water Bodies
- Mask
- DC Boundary
- Park

Welcome

- If this is your first time using DCStat's Neighborhood View, [click here](#) for a brief overview of the site and quick start information to begin using the application.
- For more detailed information, go to our complete [User Guide](#).
- [Online Help](#) is available if you have questions about using DCStat.

What's New

- DCStat Announces New Data Available via Neighborhood View 1.0. For complete information [click here](#).



Conclusion

Current Status of The MAR

- ✓ ACTIVE ADDRESS POINTS: 135,900
- ✓ RETIRED ADDRESS POINTS: 1482
- ✓ ALIASES: 4797

“The MAR allows the District government to more easily compare information across databases and agencies. The format and quality of address information varies across government systems, making it nearly impossible for government to identify all the activity associated with a given address. Now, addressing standards are built into the MAR. These standards define the valid components of DC addresses (AID, Number, Street Name, Street Type, and Quadrant), including their correct formatting and spelling.” (DC GIS Website)

“Every Address Is Important” – MAR Team